

COMPENSATION OF THE REFRACTIVE INDEX OF DOPED InP
ABSTRACT OF THE INVENTION

A mode transformer (10) includes a passive waveguide (120) having a first composition co-existing with a second composition to provide a guided optical wave (250). A p-doped re-growth layer (130) having the first composition is disposed on top of the passive waveguide (120). A compensated n-doped buffer (110) is disposed underneath the passive waveguide (120). The compensated n-doped buffer (110) has the first composition and a sufficient concentration of a third composition such that the compensated n-doped buffer layer has a reduced index difference between the p-doped re-growth layer (130) and the compensated n-doped buffer layer (110) to compensate the index difference between the p-doped re-growth layer (130) and the originally uncompensated n-doped buffer in order to preserve the symmetry of the guided optical wave (250).